USAID. Afghanistan

Feasibility Study for the Development of a Gas Fired Thermal Facility in Sheberghan

Inception Report

January 6, 2005.

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PDE (A Woodgroup Company)

Approved by

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1. Introduction

1.1 This Report

ININ Corp and PDE (A Woodgroup Engineering Company) , are currently participating in the invitation by AEAI/USAID for the undertaking the Feasibility Review of a Gas Fired Thermal Power Plant in Sheberghan, Afghanistan, referred to as the Feasibility Study(FS). This report serves as a project inception document and outlines ININ's proposed approach to the information collection and analysis tasks required under the possible.

The response is being address under a joint effort by and between ININ Corp, PDE Woodgroup Engineering and Woodgroup Power Operations, with a scope split that we believe best addressed the requirement of the proposal.

All "in country" activities in Afghanistan will be sole responsibility of ININ Corp and its local associates. We will establish a team and set up project offices in our existing associated offices in Kabul, with adequate computer, printing, communication, transportation, and office equipment and supplies for adequate performance and fulfillment of the scope and deliverables of the study.

ININ Corp will be the entity directing the relationships with the USAID and will be the Project Manager for this effort, leveraging on the ongoing activities by ININ Corp in Afghanistan.

All Technical information will produced by PDE Woodgroup Engineering,

All Operational and Environmental Information will be produced by Woodgroup Power Operations.

All activities not assumed by Woodgroup will be produced by ININ.

The above companies have assembled a team of experts with a solid background experience for this effort.

We would like to highlight that we have four afghan nationals working in this project in relevant project positions.

J.M. George Castellanos
Project Director

1.2 Project Summary

1.2.1 Background – The Feasibility Study Directive

Issued in late 2004, the FS requires for interested proponents to approach the project in two phases as follows.

Phase I. Prepare a feasibility study of the development, construction, acceptance and operation and maintenance of a gas fired thermal power facility inclusive of ancillary requirements at Sherbeghan

Phase II:Finalize, release and manage the Invitation to Bid (ITB) process for the proposed facility under a bid award process which combines Engineering, Procurement and Construction (EPC) and Operation and Maintenance (O &M) of the facility through the first major overhaul period inclusive of recommendation of Bid award selection

1.2.2 Project Scope and Objectives

The overall objective of the study is to contribute to the preparation of the complete Feasibility Review according to the terms, scope and conditions of the FS. The tasks to be undertaken can be listed as follows:

1.2.2. Proposed Methodology :

1.2.2.1. **Technical**

a. Determine the plant site with defined consideration of preliminary site geology, access for site preparation and deliveries for construction and O & M and efficient provision of gas and water supply and grid interconnection costs. (Site purchase cost to be provided).

b. Verify currently available gas supply including capability of the known gas reserve base to supply the proposed plant configuration for its operating life.

c. Verify gas supply pressure and determine and cost any required compression facilities including back-up compressor if required.

d. Assess available data on gas reserves and production potential providing clear specification of the probabilities applicable to additional gas volumes expected to be available and the time frame expected for their development.

e. Provide single line coordinate mapping, length and cost for gas supply and water supply pipeline inclusive of required compression and intake structures, land costs and rights of way as applicable.

f. Specify and cost any required liquid fuels back-up and storage requirement inclusive of fuel availability.

g.Determine water supply quality and availability requirements consistent with proposed plant configuration.

h.In consideration of site, gas and water supply, and grid interconnect and Northern Electrical System energy and capacity requirements assess plant design options and define among options the proposed least cost plant design option. (Consideration of future thermal plant expansion potential consistent with gas field development potential is expected)

i.Provide for selected design option a proposed plant configuration with capital cost specification within a Budget Cost of plus or minus twenty (20) percent with conceptual engineering and one-line diagrams and a cost breakdown for the electrical, mechanical, structural and civil engineering as follows:

i.1.Cost breakdown for:

a. Power Island equipment
b. Electrical equipment and installation
c. Mechanical equipment and installation
d. Other supply items (USAIDing spares etc)
e. Civil works
f . Black start requirements

i.2. Conceptual engineering and one-line diagrams as applicable for:

a. Heat and mass balance study
b. Process flow diagram
c.Piping and Instrumentation diagram
d.Basic design specification
e.Equipment specification
f.Plant layout
g. Equipment and basic piping layout
h. HV/LV electrical design based on single line diagram
i. Control Philosophy
j. Conceptual civil design

j. Provide specification of any Battery Limits (supplies and works that would be expected to be outside of the scope of supply under a standard ITB) that may apply to the development of the ITB.
k. For the proposed plant configuration define manning requirements with specification of training requirements and timing and options for training local staff.

l. For the proposed plant configuration provide order of magnitude costs for plant operation inclusive of:

l.1. Fuel cost per KWH.
l..2. Manning costs
l.3. Materials and spare parts costs (through first major overhaul)
l.4 Consumables cost
l.5 Manning infrastructure costs inclusive of security costs and housing etc as applicable

m. For the proposed configuration specify order of magnitude costs for:

m.1 USAIDing
m.2. First minor overhaul maintenance costs
m.3 First major overhaul maintenance costs

n. For all maintenance for the proposed configuration please specify skill requirements and expected domestic skills availability to maintain the plant. If local skills are found to be limited in availability propose training regimen inclusive of timing requirement to bring local skills to level required to maximize use of local staff.

o. For the proposed configuration specify sourcing requirements for materials and spare parts required for Operation and Maintenance.

1.2.2.2. **Environmental & Sociological Impact**

a. For the site selected define and provide schedule for the sequencing and acquisition of all required national, regional and local site permits and licenses. In definition provide listing of permitting and licensing authorities.

b. Provide an Environmental and Sociological Impact Statements consistent with World Bank Environmental Impact Assessment (EIA) Guidelines.

1.2.2.3. **Financial and Economic Evaluations**

a. Provide a basic integrated financial model incorporating all cost information which produces a cost per delivered KWH under variable dispatch conditions. The model should be capable of providing sensitivity assessments applicable to major cost input, operational plant loading and financing assumptions.

b. Il model inputs are to be specified on a reasonably detailed input page indicating source, age and quality of data inputs utilized.

c. Provide an assessment of the relative cost per KWH of the proposed facility versus other available assessed options for electric supply for the Northern Electrical System.

1.2.2.4. **Preparation for Implementation for Phase II. (SUBJECT TO USAID APPROVAL OF PHASE I RESULTS)**

a. Using available templates for Invitation to Bid for preliminary draft ITB for the proposed facility.
-Engineering, Procurement and Construction and Commissioning
-Operations, Maintenance and Major Maintenance
-Implementation Agreement
-Power Purchase Agreement
-Fuel Supply Agreement
-Guarantee Agreements by Multilaterals
-Land Conveyance Agreement

b. Utilizing known industry best practices develop preliminary draft of the Criteria for Bid Award and Bid process control procedures.

c. Develop a preliminary list and, following USAID/Afghanistan approval of the list, request expressions of interest from pre-qualified EPC & O & M companies that will be provided the ITB. (Bids may be provided to companies which form their own EPC and O&M consortiums to respond to the ITB.)

1.3 Structure of the Report

The structure of this report is as follows:

- Section 2 presents an overview of the project approach, detailing how each of the data collection tasks contributes to various sections of the analysis;

- Section 3 summarizes the approach for the collection of information;

- Section 4 summarizes the approach for the analysis of information; and

- Section 5 lists the deliverables

- Section 6 indicates the Project Team.

2. Project Overview

As highlighted in Section 1.2, the project objectives will be achieved through the effective combination of both information *collection* and *analysis.* A series of tasks for data collection and analysis were identified in the project specification and discussed in ININ's original project proposal. Figure 2.1 displays how each of the data collection tasks will contribute to the various stages of data analysis.

Information
Collection
Operational, Emissions and Abatement Data

Figure 2.1 Overview of approach to project (*aspects having greatest resource prioritization)

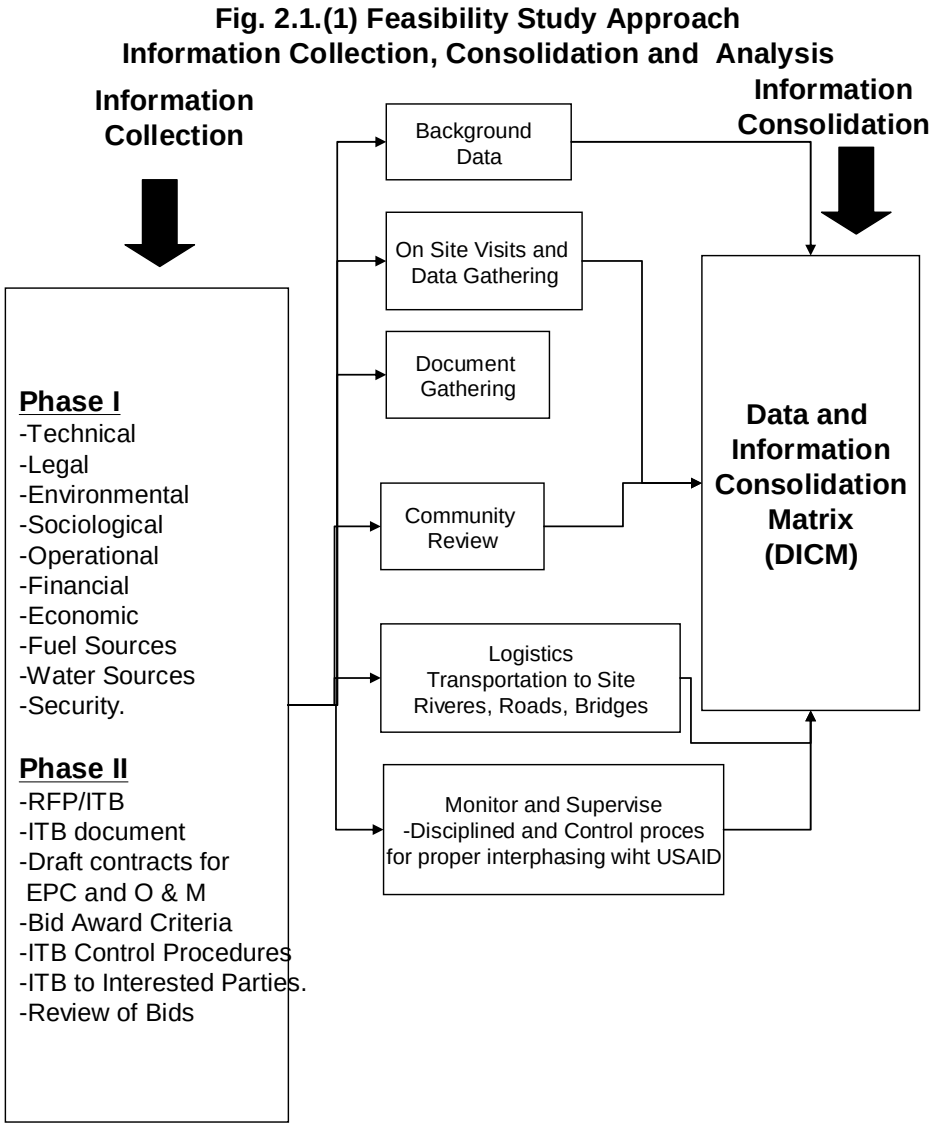
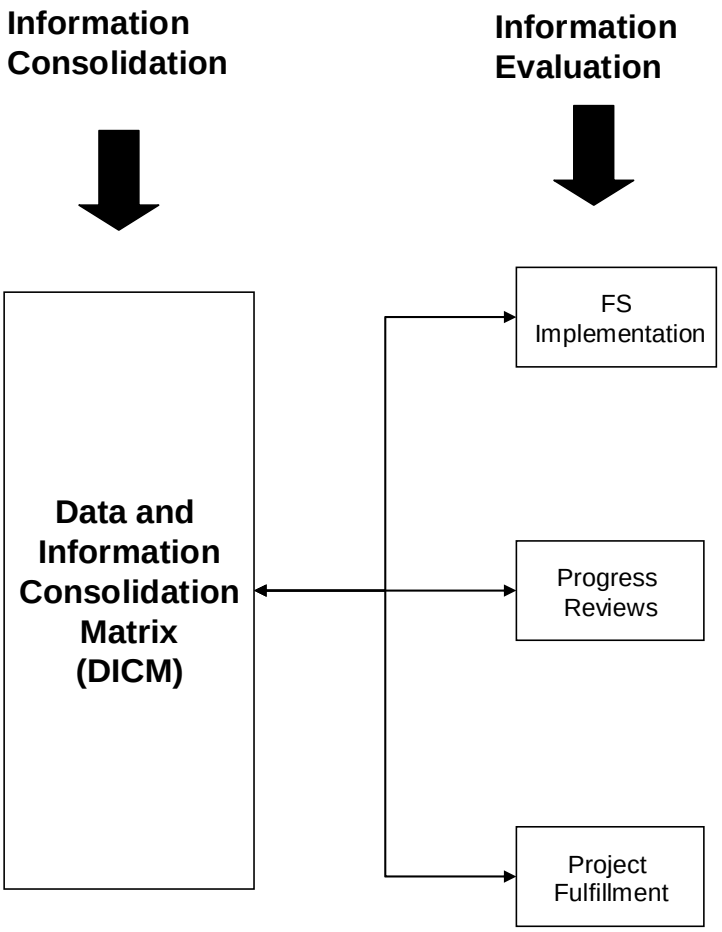


Fig. 2.1.(2) Feasibility Study Approach
Information, Collection, Consolidation and Analysis



3. Approach to Information Collection

Information will be gathered from a wide range of sources and contacts in order to provide the most appropriate data in support of the analysis sections. Table 3.1 lists the type of information and the level of data collection required, as well as potential sources of information for each of the data collection tasks outlined in Section 2. As intended, ININ will liase with USAID to ensure that the development of this project is as co-ordinated as possible with the other USAID projects.

Table 3.1. Types and Sources of Information

Type of Information Required	Level of data collection	Source of information
Background Data		
Phase I		
	Initial review by leading team members, ie. Project director, electrical engineer, mechanical engineer, environmental engineer.	Master Plan of the Ministry of Water and Power, by Norconsult (AFG/03170).
Technical	√	
Operational	√	
Environmental	√	
Sociological	√	
Financial	√	
Economic	√	
Fuel Sources	√	
Water Sources	√	
Security	√	
Others	√	
1. On Site Data Gathering		
a. Site	-Fuel Availability -Proximity to linear facilities (road, rail, transmission corridors,water supply and fuel supply sources or corridors -Topographic factors -Air Quality Exclusion Zones (if applicable) -Proximity to urbanized or residential areas -Tribal Considerations to land -Proximity to areas of use conflicts (airports, military sensitivity, or adverse to community acceptance -Proximity to environmentally sensitive areas (river systems, ecosystems balances) -Aesthetic constraints (noise, open space, public view) affecting placement or height.	The objective is to produce at least primary site and an alternative site for the final project development. A site selection matrix will be established including all the items gathered for the viable sites. Criteria weighted average will include all applicable site qualification elements for proper site selection.

	-Cultural, terrestrial, or aquatic environmental constraints(including cemeteries, wetlands or other sensitive aspects) that may affect proper permitting and multilateral financing. -Geological factors (seismic, flood area, etc.)	Exclusionary Factors 1. fuel 2. Transmission Access 3. Water Supply 4. Air Quality 5. Geological Structures and Features
b.Technical	System Planning will be required to evaluate the proper initial project size (based on fuel availability) focusing on the most economical solution. Consideration will be given to time series trends, end-use and econometric analysis. Power plant generation units will be characterized by their maximum and minimum capacity, fuel burn rate, fuel, price, fixed and variable O&M Costs, scheduled maintenance, and forced outage rates. The intention is to evaluate the life cycle cost. 1.Based on the initial information on the Sheberghan fields, the options could be: a.One Power Plant. (Two 25.0 MW Units) preferably in combined cycle, scalable to increase capacity in 25 MW additions. b.One Power Plant. (Two 12.5 MW Units) preferably in combined cycle, scalable to increase capacity in 12.5 MW. Additions. c.Distributed Generation Solutions, locating reciprocating engines in simple (which have a higher efficiency than turbines) located at the different “well head locations” Unit sizes from 2.5 MW in modular configurations of 12 MW batteries. We will evaluate frame units, aero derivative and reciprocating engines. 2. Plant Layout Alternatives a.Number of Generation Units b.Size of Generation Units c.Type of condenser cooling systems d.Type of air quality control systems e. Anticipated solid waste volumes f. Type of fuel handling system 3. Cost breakdown for: a.Power Island equipment b.Electrical equipment and installation c.Mechanical equipment and installation d.Other supply items (Commissioning spares etc)	Fuel Source. Natural Gas.

	e.Civil works f.Black start requirements g.onceptual engineering and one-line diagrams as applicable for: i.Heat and mass balance study ii.Process flow diagram iii.Piping and Instrumentation diagram iv.Basic design specification v.Equipment specification vi.Plant layout vii.Equipment and basic piping layout viii.HV/LV electrical design based on single line diagram ix.Control Philosophy x. Conceptual civil design 4. Electrical Interconnections a. Evaluate electrical interconnection costs of transmission lines and substations to designated site , and grid interconnect and Northern Electrical System. 5. Fuel Supply a.-Available gas supply including capability of the known gas reserve base to supply the proposed plant configuration for its operating life. b.Verify gas supply pressure and determine and cost any required compression facilities including back-up compressor if required. c.Assess available data on gas reserves and production potential providing clear specification of the probabilities applicable to additional gas volumes expected to be available and the time frame expected for their development. d.Provide single line coordinate mapping, length and cost for gas supply and water supply pipeline inclusive of required compression and intake structures, land costs and rights of way as applicable. e.Specify and cost any required liquid fuels back-up and storage requirement inclusive of fuel availability. 6. Water Supply a.Determine water supply quality and availability requirements consistent with proposed plant configuration. b.Consideration of site, gas and water supply, and grid interconnect and Northern Electrical System energy and capacity requirements assess plant design options and define among options the proposed least cost plant design option. (Consideration of future thermal plant expansion potential consistent with gas field development potential is expected)	
c. Operational	Operational focus will be directed and the training and preparation of an operational staff, in order to minimize the presence of expats and maximize the contracting for the Afghan personnel.	Woodgroup Power Operations

	Operation and Maintenance budgets will be prepared (for the evaluated technology solutions) to include all fixed and variable costs and all preventive and major maintenance costs. Operational Approach will include indicating to the proponensts their obligation to provide the following: 1. Operations Programs a.Plant Start Up bNormal Operations cOff Normal Operations d.Shutdown e.Emergency Operations 2. Maintenance Programs a.Identify all plant equipment requiring maintenance b.Research maintenance in accordance to vendor recommendations c.Develop maintenance procedures for equipment e.Establish maintenance management software and load data 3. Safety and Health Programs. a.Safety. Develop procedures incorporating training, employee responsibility, emergency response, lock-out/tag-out procedures, and inspection. b.Develop program focusing on basic safety practices (eye protection, proper footwear, fall protection, electrical safety, welding and cutting, respiratory protection, hearing conservation and hazardous material handling, weather related emergencies. 4. Training Programs a.Pre-Commercial Operations. To be completed in advance of plant start up. b.Complete Integrated Operations training. Follows on site equipment vendor and ECP training. c.Operations Procedures On Going Training. WG has devices a system where plant personnel is continuously trained and review for proper qualifications and skill required for safe and adequate plant operations. 5. Environmental Programs Set of manuals and procedures for complete fulfillment of all environmental aspects of the power generation facility, ensuring compliance with air emissions, wastewater discharge, solid waste management and emergency response.	

d. Environmental	It is presumed, that multilateral agencies will be involved in the project finance, and all World Bank environmental process and guidelines have to be observed. 1.Basic Evaluation will address the following: a. Geotechnical b. Water Utilization c. Minimization of earthworks d. Flood protection c. Wetlands avoidance f. Separation of stack and cooling tower plumes g. Avoidance of drift on sensitive locations h. Land use criteria (if applicable) i. Noise criteria j. Aesthetics k. Surface and ground water contamination l. Minimization of pipeline and transmission lines m. Constructions 2. Pollutants a. Particulates from combustion sources b. Particulates from fugitive emissions c. Sulfur Dioxide d. Nitrogen Oxides e. Carbon Monoxide f. Hydrocarbons (volatile organic compounds or VOC's) and g. Hazardous pollutants (HAPs) such as lead, beryllium, mercury and fluorides.	Woodgroup Power Operations
e. Sociological	Due to the nature of Afghan culture, we will give a lot of attention to community information processes and evaluating the impacts of a power generation plan in the designated region. Access to information about how and when a project will affect the public is a fundamental right to enable affected communities to participate and give informed input into the operation of a project. The WB has recognized this right by adopting information policies which acknowledge that dissemination of project and policy information is essential for effective implementation and project sustainability. The World Bank's Environmental Assessment (EA) Policy requires disclosure and accessibility of information regarding EA documents to project affected groups throughout the process. A summary of the EA is expected to be provided in a timely manner to groups once the EIA draft is completed. We will make sure that the relevant communities are presented with proper project information for their consideration.	ININ.In Country Due Diligence
f. Economics	The economic and financial feasibility is the cornerstone of all	Woodgroup PDE

	project development. The financial analysis of the project, will examine the project costs and benefits from a national perspective. Our approach will address both the internal GOA requirements, and the international lending agencies approach to project finance and viability, this to allow for the Phase II to move forward in an integral basis, having the financial viability as the base for the project. We envision providing a "financing guidelines" template for the project that fulfills the international banking sector. It will be critical to provide some type of "sovereign" debt or some debt guarantees to the lending agencies in order for the project to achieve financial closing. We will expand on the following elements of project financing: 1. Risk Allocation and Classification a. Operating b. Technical c. Cost d. Management e. Infrastructure f. Environmental g. Market h. Fuel Supply i. Political j. Force Majeure k. Funding l. Participant m. Engineering n. Completion o. Syndication p. Security	
g. Financial Model	1. ,We will produce an excel based financial model addressing project itemized cost (equipment, construction, commisioning, operational) including but not limted to the following sensitivities: a.Price breakdown by each component =capacity charge-fixed & variable O & M--fuel (gas/liquids) costs - b.Capacity charge breakdown--by debt/equity component subject to plant loading/capacity factor assessment c. Fuel component--gas and liquids--quantity/quality variation assessment-i.e. cubic meters-to thermal value delivered d. Gas pipeline delivery costs-subject to flow assessment-price/mmbtu e. Model pipelines -cost for compression/pumping-delivery cost to plant f. Transmission interconnect: model cost by major	Woodgroup PDE and ININ

	component-delivery cost to system form plant g. Plant capital cost by major component-including BOP and risk and contingency breakout h. Plant configuration model-with capability to alter plant configuration specs.--heat rate/ramping/dispatch/capital cost/operating hours sensitivity charachteristics/ o&m adjustments etc. i.Operation & maintenance (fixed & variable) sensitivity/timing of overhauls/cost of spares/major minor maintenance period costs.-amenable to variance with plant configuration and operating hours. j. Financing sensitivity-sorces and costs of capital and impact on delivered price.	
h. Fuel Sources	In spite of previous production experience in the Sheberghan region and the existence of Afghan Gas, a well structure reservoir study will be required to assure project financing. At this stage, it is our understanding that ININ will not be responsible for undertaken the studies, and that this studies will not be part of ININ's deliverable. Options for plant sitting may be "well head" and reduce the need to build pipelines and instead build transmission lines to the consumption centers. The per km cost between a pipeline and a transmission line may be four to five times more expensive, so it will better to consider locating the power plant near the gas productions fields. 1. Options: a. Khwaja Gogerdaq b. Jarauadaq c. Juma e. Bashikud Preliminary studies indicate that the possible reserves in the region may be 35 BCM. Evaluation of Sources in the Sheberghan region. 2. Five Options at least need to be evaluated: a. Potential fuel type b. Reserves c. Alternative Fuel Sources d. Transportation Systems Costs and Routes e. Fuel Pricing f. Design and Operational Impacts	Woodgroup PDE/ ININ
I. Water Sources	In order to be able to build a power plant, water is required for normal operations. 1. Water sources evaluation will include but will not be limited to the following:	Woodgroup PDE/ININ

	a. Identify water sources (locations, effluents, flow rates, water quality) b. Identify all waste streams c. Identify flow rates and water quality for each waste stream Determine de suitability for reuse of each waste stream, with and without treatment d. Determine treatment requirements for remaining discharges to meet regulatory requirements, either separately or in combination. f. Perform a conceptual design of each feasible alternative treatment systems g. Consideration would be given to the possibility to have the power plant produce potable water (as a by product) together with electricity.	
j.Security	Due to the nature of the region, we will have to obtain security support for our employees in the execution of this project. Also, we consider that for Phase II, it will be critical to provide a solid informational package to the possible proponents with information on all relevant security risks in the area, including "mines free zones", possible risks and mitigating recommendations.	ININ
k. Others	Maximize use of local human, technical, commercial and raw materials resources. Provide knowledge transfer to the regions where the projects will be located, to allow for locals to participate in the process development, evaluation, construction, implementation and operational phases.	Woodgroup PDE, ININ
2. Document Gathering	Based on physical visits to project locations, meeting with pertaining local authorities, and consultants, and based on information held by these parties from previous studies , compile or produce the necessary documentation to support the scope of the FS.	ININ
Technical	√	
Operational	√	
Environmental	√	
Sociological	√	
Financial	√	
Economic	√	
Fuel Sources	√	
Water Sources	√	
Security	√	
Others	√	
3. Community Review	Due to the sensitivity of Afghan culture and in respect to it, understanding their common rights , privileges and interests ,arising from social, family or religious associations, we will approach our review efforts accordingly. The subject items indicated below will be addressed.	ININ

	With approval from USAID, consider preparing a briefing document for distribution to USAID indicated parties.	
Technical	√	
Operational	√	
Environmental	√	
Sociological	√	
Financial	√	
Economic	√	
Fuel Sources	√	
Water Sources	√	
Security	√	
Others	√	
5. Logistics Review	Project viability will also be affected by the viability of transportation of the required project equipment to the project site. Study will require indication as to how to transport the designated equipment from the origination point to the project site. Study will evaluate the proper equipment routing and indicate possible routes. All project items will be addressed as indicated below.	ININ
Technical	√	
Operational	√	
Environmental	√	
Sociological	√	
Financial	√	
Economic	√	
Fuel Sources	√	
Water Sources	√	
Security	√	
Others		
6. Monitoring and Supervision and Interphase with USAID	The FS process is a dynamic process, with continued and constant interphase with the USAID designated personnel. We will designate contact person and a periodicity for meeting in order to present progress reports and address any issues that may be affecting the normal development of the study activities. All project applicable items will be addressed.	ININ
Technical	√	
Operational	√	
Environmental	√	
Sociological	√	
Financial	√	
Economic	√	
Fuel Sources	√	
Water Sources	√	
Security	√	
Others	√	

Phase II.		

-RFP/ITB -ITB document -Draft contracts for -EPCC -O&M,MM -Implementation -Power Purchase -Fuel Supply -Guarantees by Multilaterals -Land Conveyance -ITB Control Procedures -ITB to Qualified Parties - Bid Award Review and Merit Classification of Bids		
a. ITB	We intend to open a prequalification process to short list at least three (3) qualified bidders. Prequalification will include but not be limited to: a. Experience b. Financial Position c. Technical Capabilities d. Deliverability guarantees e. Product Quality f. Track Record ITB should be opened to a consortium structure, aggregating equipment supplier, construction companies, O&M companies, financing companies and private developers. Decision will be taken to "sell " the ITB documents or make it more of a selective process with expression of interest prior to ITB distribution.	Woodgroup PDE, ININ
b. ITB Document	Once Phase I is completed, and approval for Phase II is obtained, the target is to structure a well organized ITP process in accordance to a specific set of technical, economical, commercial and legal requirements. It is our belief, that the most structured the ITP is, the more successful that the final result would be. 1. Adequate Structure a. Identify and Qualify Bidders b. Invitation to Bidders c. Information for Bidders d. Instruction to Bidders	Woodgroup PDE, ININ

	e. Security Package and Financing Structure f. Tariff Structure g. Bidder's Proposal and Supportive Data h. Performance Specifications and Drawings i. Draft Implementation Agreement j. Draft Power Purchase Agreement k. Draft Fuel Supply Agreement l. Draft of Guarantee Agreements by Multilaterals m. Draft Land Conveyance Agreement n. Site Soils Investigation data	
c. Draft Contracts	Study will require producing proper contract drafts to be provided to the interested bidders as guidelines for the contracting for the project. 1. Contract drafts will include.: a. Engineering, Procurement and Construction and Commissioning b. Operations, Maintenance and Major Maintenance c. Implementation Agreement d. Power Purchase Agreement e. Fuel Supply Agreement f. Guarantee Agreements by Multilaterals g. Land Conveyance Agreement	Woodgroup, ININ
d. ITB Control Procedures	In order to have a structured process, we consider the following has to be observed. 1. Minimum Qualification/Disqualification Elements a. Date Due b. Prescribed Response Structure and Required Validation Documentation c. Response in the required form and structure d. Complete/Incomplete Information for Proper Review e. Compliance/Non-Compliance with specific requirements mandatory for the RFP/ITB 2. Evaluation a. Price Factors b. Non Price Factors 3. Critical Response Item Letter of Conveyance. This should include the offering proposal validated by the bidder. Minimum contents should be: a. Verification of Offered Prices b. Validity Period c. Verification of completeness and accuracy d. Verification that the RFP/ITB is fully understood by Bidder e. Verification of Guarantees f. Any additional information considered critical for validation or verification of RFP/ITB	Woodgroup PDE, ININ

e. ITB to Qualified Parties	Under the approval of USAID, ININ will provide complete RFP/ITB packages to qualified parties and if required, will visit and make a presentation of the project to the qualified parties in their respective location. This visit to the offices of the interested parties, has proven in the past, to be a good motivator to have qualified parties' proceeds with presentation of a formal proposal.	Woodgroup PDE, ININ
f. Bid Award Review and Merit Classification of Bids	ININ intends to develop an RFP/ITB classification review matrix, utilizing the RFP/ITB award criteria for review by USAID prior to final notification to awarded bidder. ININ recommends to structure a Weighted Value Point Evaluation System with 50% weighted average for Price Items and 50% for weighted average for Non Price Items (using applicable items, adding or deleting) as follows: **a. Price Items** Weighted Value: 50.0% Points Available: 500 Points. **1. Price** i. Capacity and energy prices ii. Tariff Structure iii. Dispatch iv. Project Capital Cost v. Fixed O&M Cost vi. Financing Cost vii. Insurance Cost viii. Effects on System Costs **b. Non-Price Items:** Weighted Value: 50.0 % Points Points Available: 500 **2. Comprehensiveness of Response.** Weighted Value: 5.0% Point Available : 50 i. Level of Development, completeness of ITB Proposal **3. Financial Stability and Proposal Integrity** Weighted Value: 15.0% Point Available: :150 i. Financial Status of bidders ii. Experience of Bidders iii. Level of Development, completeness of ITB Proposal iv. Level of Securities, guarantees provides v. Acceptance of Contract terms vi. Other Benefits **4. Technical** Weighted Value : 20.0% Point Available: : 200	Woodgroup PDE, ININ

	i. Dispatch ability ii. Equipment Obsolescence iii. Spare parts availability iv. Schedule v. Training Program **5. Use of Local Resources:** Weighted Value 15.0% Point Available: 150 i. Manpower ii. Local Raw Materials iii. Training of Local Personnel iv. Local contractors	
g. Post Award	ININ also considers that subsequent to the award, services will be required to include a Project Management team to interphase and support the awarded bidder during the construction, financing, equipment importation, logistics (transportation), and final commissioning of the project.	Woodgroup PDE, ININ

Note

1. The establishment of a representative profile of plants will be based on four key parameters:
(i) Plant size (50 MW);
(ii) Fuel type (natural gas);
(iii) Plant age (2005 onwards); and
(iv) Geographic location (including North Afghanistan, Sheberghan Region.

4. Approach to Information Analysis

The following sections provide details on the proposed approach to the information analysis tasks. These tasks are supported by the information gathering tasks outlined in Section 3, as described in Figure 2.1.

4.1Background Data

Addressing sourcing initial exising information on the project will be based on an initial review of the existing Power Sector Master Plan.

Initial meeting to be attended by Project Director and supporting staff will procure obtaining a complete copy of said document.

Our intention is to evaluate available potential for use in the energy sector the information on the gas fields within the Balkh Region around the City of Sheberghan. Within the Master Plan of the Ministry of Water and Power developed with the assistance of Norconsult (Power Sector Master Plan ((AFG/03170)) Norconsult Norplan) the feasibility of developing a thermal power facility in Sheberghan was identified as a high priority study.

In spite of efforts undertaken to determine the availability of gas supply and reserves for a thermal power facility in Sheberghan, further clarification and validation of gas supply and reserves is needed. The initial view within the Master plan was that the thermal plant development at Sheberghan, of a 50MW, could be available as early as November 2007 with potential to contribute to meeting demand growth in the north and depending on sizing and timing in the Kabul Region.

4.2 On Site visits and Data Gathering

The Project team will coordinate for site visits to the Sheberghan region and evaluate the information, logistics and viability of locations in the Khwaja Gogerdaq, Jarquadaq, Yatimtaq, Juma, Bashikud and Jungle-e-Kalan. Project Team will require receiving completed seismic analysis for the pertaining fields.
Data gathering will address the items indicated under Section 3.1.1.a.
As indicated, this site visits and data gathering address all aspects of project activities.
Direct visits to project region will be arranged and coordinated with local authorities.

4.3 Document Gathering

The team will set up offices in Kabul and in Houston. The Kabul office will serve as the staging area for project direction in Afghanistan. Project office will be provided with necessary computer equipment, photocopying, printing, telephones and all necessary office furniture for proper execution of necessary study activities. Project document control will be established using computer control and inventoried in order to facilitate use and access when required.

4.4 Community Review

Our approach is extremely oriented to making sure that community participation is priority. This participation to be not only for project acceptance, but to maximize the use of regional resources and augment the benefits distribution of the projects on a regional level. It is a proven fact, that social causes in areas of infrastructure project, allow for the project to be treated as "belonging to them" creating a favorable environment for all project related activities.

4.5. Logistics

The Mediterranean location of Afghanistan is also a challenge to be able to adequately transport equipment to the project site. In addition, road in Afghanistan are not in proper condition. Study will indicate what are the most viable routes to transport the type of equipment to the designated project sites.

4.6 Monitor/Interphase

Project Coordination will be under the direction of a designated one source of contact with an alternate. The objective is to structure a dynamic relationship between USAID and the Project Team, with periodic meeting the designated periodicity.

Data Information Consolidation Matrix

All information will be stored, compiled and tallied at a designated project location in Kabul and in Houston. Both location will be "mirror images" with date, this in order to proceed with the study in an expedite, fluent and effective fashion.

5. Deliverables

As detailed in the Technical Specification, three reports are specifically required from the study, in addition to support provided to the USAID's working group. These are outlined in Table 5.1, along with the relevant timeframes (in accordance with contractual requirements).

Table 5.1 Key Project Deliverables and Associated Timescales

Deliverable	Issue Date
Interim report	15 April 2005
Draft final report	15 February 2005
Final report	30 March 2005

The content of each of the above reports will be agreed with the USAID prior to submission. The final report will be a detailed report that summarizes the information collected and contains the main results of the work.

SUMMARY OF DELIVERABLES

The output of this feasibility study will consist of four (4) main deliverables:

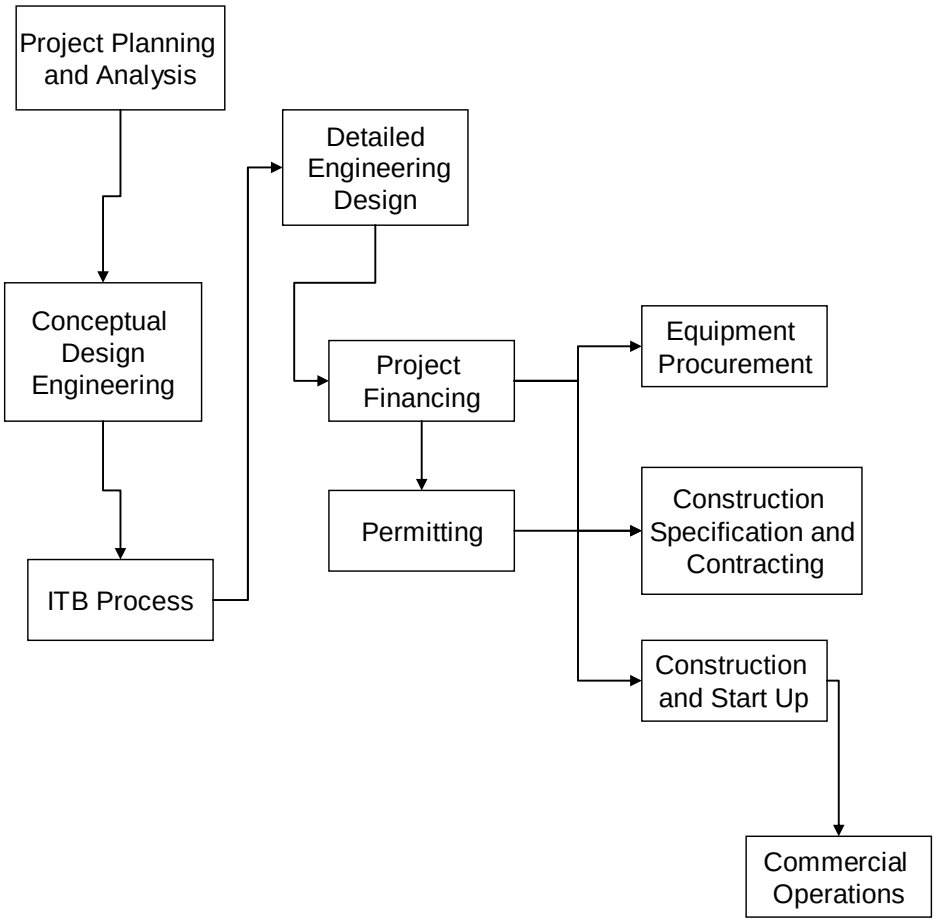
a. Feasibility report addressing the technical, financial, economic, environmental, sociological and operational issues attendant to the proposed configuration selected for development of the Sherbeghan thermal power facility.

b. A recommendation of the best option thermal plant configuration to go forward with in an Invitation to Tender to develop the facility.

c. An Invitation to Bid document for the facility proven to be feasible as a results of the study.

d. An assessment of the Bids received and recommendation for Bid award which results from a ranking of all Bid respondents against defined qualitative and quantitative selection criteria as defined.

Fig. 5.1 Power Plant Review, Design and Commissioning Process



6. The Team

1. PDE. A Woodgroup Company
See Attached. Woodgroup PDE Qualifications

2. ININ Corp
See Attached. ININ Corp. Qualifications

3. Team Members

ININ is encouraged to recruit local qualified Afghans wherever possible to participate in its work as local ININ staff or sub-contractor. Presently, the project encompasses contracting five afghan engineers.

All proposed staff is highly skilled and accomplished in their respective areas of expertise in order to meet the study schedule.

It is expected that in order to meet schedule the team will consist at least of thirteen (13) main senior personnel discussed below, including junior personnel and others as proposed by ININ.

Team Members

J.M George M. Castellanos. MBA. JD. Eng.
Projejc Director. Over 25 year of experience in project due diligence, engineering reviews, project acquisitions and power plant development and management.

Francisco Ramirez
Juan M. Ramires (Alternate)
Haidar Barak
Senior Project Manager with at least 25 years of domestic and international experience in managing the feasibility assessment of power design and ancillary facility development.

Mauricio Rodriquez
Gulla Jan Hairan
Cost and Estimating Engineer with at least 15 years of experience in diverse design technologies.

Joaquin Herrera
Natural Gas Reserves and Production Specialist with at least 10 years of experience in assessing field reserve data and production capability and costing.

Andres Baron
Gas/water Pipeline Engineer with at least 10 years of experience in gas/water pipeline development, location and costing. Experience in the application of Geographical Information System (GIS) and Global Positioning System (GPS) for on land pipeline route surveys and mapping would be an advantage.

Manuel Garcia
Geophysical-Civil Engineer with ten years of experience in seismological assessment of sites for power facilities.

Abdullela Abdul Rasool. P.E.
Marco Giraldo
Electrical Engineer with at least 10 years of experience in power facility design assessment, Grid interconnect and transmission facility location, design and costing.

Gonzalo Restrepo
Mechanical Engineer with at least 10 years of experience in power facility design assessment and costing.

Lida Maldonado
Structural Engineer with at least 10 years of experience in power facility design and cost assessment.

Carlos Lozano
David Pinzon
Operation and Maintenance Engineer with at least 10 years of experience in operation and maintenance cost and manning requirements in an environment similar to that found in Afghanistan.

Gulla Jan Hairan
Peter King
Turnkey EPC and O & M Contract Specialist with at least 10 years of experience in FIDIC application.

Mauricion Rodriguez
Financial Analyst-Economist with at least 10 years of experience in power project financial and economic modeling.

Adul Rashid Igbal. Eng
Miguel Angel Rodriguez
Engineer with at least 10 years of experience in the development, control and assessment of Invitations to Bid for power and ancillary facilities.

Jose F. Aljure
Environmental Specialist with at least ten years of experience in undertaking international environmental and sociological assessments under World Bank Guidelines.